DOCUMENT RESUME

ED 196 438 IR 009 070

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TITLE Influence of Personality on Choice of Library Study Space.
PUB DATE 23 Oct 80
NOTE 14p.: Paper presented at the Annual Convocation of the Northeastern Educational Research Association (Ellenville, NY, October 23, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Carrels; College Libraries; Facility Utilization Research; Higher Education; *Library Facilities; *Personality Traits; *Study Facilities; Study Habits
IDENTIFIERS Academic Stress; *Impulsiveness

ABSTRACT

This study explored the interaction of personality and physical environment in students' choices of study space in a university library. It was hypothesized that non-impulsive, introverted students would use small, enclosed study carrels; and that impulsive students would tend not to use study carrels. One hundred twenty students were rated for impulsiveness using the socialization scale from the California Personality Inventory and the Insolence Scale developed by Kipnis. Observations were made over four time periods to observe whether the progression of the semester and resultant academic stresses would make a difference in students' choices of study carrels. Correlation of results from the survey supported the original hypothesis, and showed that as academic stress increased, students tended to prefer the more isolated study carrels. A list of references is provided. (SW)

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Influence of Personality on Choice of Library Study Space

Presented at the NERA 11th Annual Convocation in Ellenville, New York

October 23, 1980

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Influence of Personality Characteristics on Choice of Library Study Space

ABSTRACT

It has been pointed out that all of man's attempts at need satisfaction involve him in interaction and exchanges with his physical environment. It follows that individuals will be attracted to physical settings most likely to satisfy their personal needs. This hypothesis has been supported by previous research and, taken together, these studies suggest that variations in physical space have profound influence on individuals' feelings of well being, as well as on their performance. The present study investigated the interaction of personality and physical environment as it relates to students' choice of study space in a university library. The hypothesis of this study was that small, enclosed study carrels would be used mainly by students classified as non-impulsive, a personality construct related to introversion. On the contrary, it was expected that impulsive students would not use the carrels since they provided no opportunities for social stimulation. Using two scales to evaluate impulsiveness, it was found that non-impulsive students did tend to use the small, enclosed study carrels and that impulsive students tended to use open lounge areas for study. Several explanations can account for the results. Also, there are strong implications suggested for library design.

BACKGROUND

Studer and Stea (1966) were among the earliest researchers to investigate the relationships between environmental design and user behavior. Such concepts as personal space, psychological privacy, individual distance, environmental factors, and territoriality, as they relate to the human condition, have since been receiving increasing amounts of attention in the research literature. Hall (1966) and Sommer (1969) have called this kind of behavior proxemics, which "is the manner in which people use space as a means of regulating social interaction" (Stokols, 1978, p. 270). Proshansky and his colleagues (1970 and 1976) pointed out that all of man's attempts at need satisfaction involve him in interaction and exchanges with his environment.

It follows that individuals will be attracted to physical settings most likely to satisfy their personal needs. This notion has been studied and has received support from Altman and Haythorn (1967), Sommer (1969 and 1972), Craik (1970), Stokols (1978) and many others. Taken together, these studies suggest that variations in physical space have profound influence on an individual's feeling of well being, as well as on his/her performance.

Based on a questionnaire survey, Sommer (1966) found that many students preferred to study in the library in areas which contained large tables, lounge chairs and open space, rather than in semiprivate or private areas such as tables in the book stacks or individual study carrels. Sommer points out that "there seems to be some students who feel the need for activity or social stimulation around them, particularly the presence of other people studying, in order to maintain their concentration. We do not know the extent to which this is related to extroversion" (p. 234).

RESEARCH PROBLEM

The present study reports on the extent to which persons varying in impulsiveness, a psychological construct related to extroversion, are attracted to and actually use enclosed physical space when alternative, open space, is available.

Attention was drawn to the library setting by a report from the university librarian which mentioned that the library's study carrels were underutilized by students. Since the library had only been completed within the last year previous to this study, and considerable space for carrels had been allocated by designers, their lack of use was disappointing. Eight hundred carrels had been installed.

The carrels are small cubicles surrounded by five foot walls, and those under study were located behind the book stacks. Each was equipped with a chair, built-in desk, and bookshelf, and was designed to eliminate distractions induced by the presence of other students.

The hypothesis of the study was that carrels would be used mainly by students classified as non-impulsive. This hypothesis was based upon past research by Kipnis (1971), who found that non-impulsive students were over-achievers in school, high in need for conventional achievement, low in sensation-seeking needs, and ill-at-ease in social interactions. Non-impulsive students were found to be easily distracted by the presence of others when attempting to learn new tasks. Based upon this pattern of research results, it was expected that non-impulsive students would be attracted to the enclosed carrels, which allowed more intensive study without distractions. On the contrary, it was expected that impulsive students would avoid the carrels since they provided no opportunities for social stimulation.

METHODOLOGY

Two types of study areas within the university library were investigated. The first was the previously mentioned study carrels in the book stacks. The second area was an open lounge that provided both tables and upholstered lounge chairs for studying. In this second area, only students studying in the lounge chairs were included in this study.

One hundred twenty (120) male undergraduate students were approached and asked if they would mind participating in a short, anonymous survey of persons who studied in the library. The students were told that a report of the results would be available following the data analysis and they could get a copy of it on campus. Cooperating students were then rated for impulsiveness using two self report scales: the Socialization Scale from from the California Personality Inventory and the Insolence Scale developed by Kipnis. An index of impulsiveness was obtained by adding the unweighted scores of these two scales. The use of this combined score was based upon a series of studies suggesting that the combined score was more strongly related to impulsive behaviors, than either score by itself. In a sample of 573 university students, the two scales intercorrelated .45, suggesting they were measuring aspects of the same personality dimension. (See Kipnis, 1971, for the rationale underlying the use of these scales).

Following a pilot survey, which then became the data for the first time period in the overall research design, the survey was administered during three additional time periods during the academic year. The first, originally the pilot survey, occurred during the first three weeks of the fall semester; the second occurred between the 6th and 8th weeks of the same fall semester; the third period, the two weeks immediately before final examinations, which were the 10th and 11th weeks of that same semester; and, the fourth period was the

first three weeks of the following spring semester.

The time sampling was done to check on the possibility that as the semester progressed, and as the stresses of term papers and examinations increased, heightened needs for study would induce all students to prefer the isolation of the study carrels. If this occurred, one would expect differences in choice of study-setting between impulsive and non-impulsive students to be greatest at the beginning of each semester, when, presumably, mainly non-impulsive students would be motivated by their characteristic needs for achievement to study in a non-distracting setting such as the study carrels.

RESULTS

A. Pilot Study:

The pilot study was conducted to determine if the research design would prove to be useful in evaluating the hypothesis. Although 20 students completed the inventory, only 16 answer sheets were sufficiently complete or correctly filled out for inclusion in the analysis, 9 from subjects in the carrel group and 7 from subjects in the lounge group.

It was found that the lounge group scored significantly higher on the impulsiveness scale than the carrel group, supporting the hypothesis. With these tentative results, and realizing the statistical problems with such a small sample size, it was decided to go ahead and collect 20 more inventories for each location.

B. Time Period II:

Of the 20 inventories collected for each location during this time period, only 14 from the lounge group, and 17 from the carrel group were usable.

As hypothesized, the lounge group had a higher mean impulsiveness score than the carrel group. However, the difference in scores was not statistically significant as in the pilot study. The carrel group mean score was higher than in the pilot study while the lounge group mean score was lower than in the pilot study.

The decision was then made to collect more data to bolster the sample size.

C. Time Period III:

Sixteen more usable inventories were collected from each of the study locations. The mean scores for the 2 groups were almost identical to the scores in time period II, but slightly closer together. It was noted that

the lounge group impulsiveness score dropped .57 points and the carrel group score dropped .38 points.

The data was then graphed, see Figure 1, and it was noted that as the semester progressed the groups' scores seemed to be converging. Knowing how time pressures increase on students as a semester progresses, perhaps students would not be as free to select their study location to suit their personal needs as they were early in the semester. A second hypothesis then evolved: As the semester progressed, heightened needs for study would induce all students to prefer the isolation of the study carrels in order to accomplish their work. At the same time, the increasing demand on the study carrels would result in more non-impulsive students being forced to work in the lounge areas due to decreased availability of their preferred study location. Hence, the result would be the convergence of the mean impulsiveness scores to a point between the extreme scores noted when free choice, that is, without outside pressure from the stress of deadlines, is available.

With this second hypothesis, the mean scores would be expected to become significantly different at the beginning of the next semester at a point in time similar to that of the pilot study, i.e. weeks 1-3. More data was then collected during the designated period of the following semester.

D. Time Period IV:

Nineteen more subjects from the lounge area completed inventories, and 22 more subjects from study carrels completed inventories. The mean scores from the two groups were again significantly different in the expected direction, and the scores were similar to those collected during the pilot study.

These results support the second hypothesis that as the stresses of term papers and examinations increase, heightened needs for study would induce all students to prefer the isolation of the study carrels.

E. Overall Results:

Figure 1 shows the average impulsiveness index scores, for the four time periods, of students who used the study carrels, and the students who used the lounge area to study. As discussed, high scores imply impulsiveness. The analysis of variance of these data over the four time periods yielded an F ratio for the factor of location that was significant beyond the .01 level, $F = 7.61$. Using previously established college student norms, 42% of the students using the carrels were non-impulsive as compared to 16% of the students in the lounge area. In short, the study carrels attracted many more non-impulsive students than did the lounge area.

DISCUSSION

The view of these results that as academic stresses increase, isolation needs of students would also increase, supports the rationale offered by designers for including carrels in libraries. As Sommer points out, designers assume that most students have a high need to study, and this need is best met in enclosed areas that eliminate distractions. From this view, the error made by library designers is in over-estimating the number of students with constant intense motivation to study. This study has raised the possibility that such intense motivation may arise only during the latter weeks of the academic semester.

It is possible that urgency of need to study, per se, is not the major reason why students are attracted to carrels. Perhaps some students seek carrels because they find the presence of other students distracting, regardless of the urgency of their study needs. That is, they seek out physical space that allows them to keep their distance from others, proxemic behavior. If this is the case, then library designers are including large numbers of carrels for misanthropes. The results of the present study do not allow us to choose between the two explanations. Perhaps both are true.

Eddy and Sinnett (1973) found similar results when they studied the relationships of students' introversion-extroversion ratings and the students' choice of campus social settings. Students rated highest on the extroversion scale were found to spend more time in settings which provided opportunities for social contact.

Both the present research and Eddy and Sinnett's research are representative of what Craik (1978) has described as major thrusts of personality research within environmental psychology. He describes them as: "(a) the conceptualization and measurement of environmental dispositions (personal styles of relating to

the everyday physical environment); and (b) the utilization of established personality inventories to predict peoples' use and modification of the physical environment, as well as its reciprocal impact on them" (p. 262). This latter behavior has already been described as proxemic behavior.

Recently, environmental psychological research has been carried over to other theoretical and applied research areas including work settings. Sundstrom, Burt and Kamp (1980) found that psychological and architectural privacy were related to satisfaction with workspace and job satisfaction. One of the reasons suggested by the researchers for these results was the link of privacy with a worker's self-identity. Privacy at work is an important issue with implications for both the design and management of work areas. These implications are analogous to those in the present study.

Other areas also being influenced by environmental psychology include community and organizational settings, small group performance, job enrichment, and improvement of human environments (Wicker, 1979).

This author concurs with Wicker's comment following his recent review of developments in ecological psychology:

> The main benefit from behavior-setting technology is likely to be improved conditions for people who occupy the settings where the technology is applied. (p. 763)

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Figure 1

Average Scores:

A = carrel groups = ----------

B = lounge groups = _____